



Staff of the National Clearinghouse for Worker Safety and Health Training surround a sculpture of labor leader George Meany (left to right): Katherine Roberts, Jeffrey MacDonald, Betsy Lewis, Joyce Reimherr.

NIH has recently launched a new initiative to investigate bionutrition. Weinberger has a strong interest in studying the mechanistic action of nutritional agents such as vitamins. Successful correlations of RAR and RXR with the vitamin A metabolites all-*trans*-retinoic acid and 9-*cis*-retinoic acid have redirected thinking about molecules such as vitamin E, whose functions have been attributed solely to its antioxidant properties. The antioxidant properties of vitamin E or α -tocopherol are especially interesting considering that this molecule is a terpene structurally similar to vitamin A.

One of the classical features of vitamin E deficiency is the inability of rodents to maintain pregnancies. Vitamin E-deficient rodents typically spontaneously resorb 15-day-old fetuses due to suppressed development of mesodermal tissues including the blood islands of the yolk sac and embryonic liver. Other cardinal deficiency signs include inductions of catabolic lysosomal enzymes that produce a muscle wasting from cellular protein and nucleic acid breakdown. These physiological changes may result from the vitamin's actions as a receptor co-activator, perhaps operating like RXR only in the presence of other *trans*-acting factors to promote gene transcription. The presence of vitamin E-binding polypeptides in liver cytoplasm has been established, although the biochemical evidence was relatively weak. These polypeptides may be more akin to the cellular retinol-binding proteins, which are thought to function more in a transport role for vitamin A. If vitamin E operates via an identified or unrecognized orphan receptor species, it most likely will require cell culture system for analysis. Such observations,

considered with the multiple roles of vitamin A metabolites, may outline future studies of the role of vitamin E and other nutritional factors and environmental chemicals as receptor-transducing signals.

National Worker Training Clearinghouse

The NIEHS Superfund Worker Training Program has awarded a new two-year contract to the George Meany Center for Labor Studies in Silver Spring, Maryland, to operate the National Clearinghouse for Worker Safety and Health Training for Hazardous Materials, Waste Operations and Emergency Response. The clearinghouse will support the nationwide NIEHS training program, facilitating the transmission of technical information and curricula developed for safety and health training programs for hazardous waste and emergency personnel.

NIEHS was given major responsibility for initiating a training grants program under the Superfund Amendments and Reauthorization Act of 1986 (SARA). The major objective of this program is to fund nonprofit organizations in developing and delivering training to workers who handle hazardous wastes or who respond to accidental releases of hazardous materials.

Although NIEHS has developed a solid national training program for workers in high-risk occupations, the safety and health problems at toxic waste cleanup sites have substantially increased in extent and severity. After initial delays in beginning remediation at waste sites, the EPA Superfund program has been supplemented with even larger environmental restoration programs by the Departments of Energy and Defense.

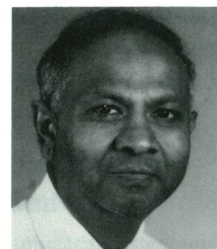
In addition to creating a resource library that holds all the curricula created by the NIEHS training program, the clearinghouse at the George Meany Center publishes a monthly news brief and activity report including information about hazardous materials, hazardous wastes and emergency response, and regulatory progress. The clearinghouse also arranges and manages technical workshops related to scientific, administrative, and regulatory issues associated with training for hazardous waste workers and emergency responders.

The George Meany Center for Labor Studies is a residential adult-learning center that provides leadership and technical education for the members, staff, and officers of national and international unions affiliated with the AFL-CIO. The Meany Center is also home to the Railway Workers Hazardous Materials Training Program, which is one of the eighteen cooperative agreement awardees that is supported through the NIEHS Worker Training Program. Further information on the clearinghouse or the NIEHS Worker Training Program can be obtained by calling (301) 431-5425.

Carcinogenesis and Diet Restriction

Rodents are the most commonly used animal models for chronic toxicity and carcinogenicity studies. The National Toxicology Program has typically used two-year studies with both sexes of rats and mice to evaluate the carcinogenic potential of chemicals.

In recent years, the survival of many strains of rats at the end of two-year studies has been less than 40%. This decreased survival is a serious concern to researchers involved in evaluating the safety and carcinogenic potential of drugs, food additives, pesticides, and other chemicals.



G. N. Rao

Diet is one of the most important environmental factors that influence survival. Diet restriction of greater than 30% for rats not subjected to chemical treatment lowers body weight, lowers the incidences of body weight-associated tumors, and increases survival at the end of two-year studies. Diet restriction markedly decreases incidences of tumors induced by chemicals and makes the animal irritable and aggressive. Furthermore, chemicals influence energy utilization, and diet restriction may disproportionately influ-